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ABSTRACT

This paper explores the challenges and opportunities facing libraries as they evolve into the electronic networked environment, and looks at options for libraries in the year 2000 and beyond. The internationally networked environment has fundamentally changed the way in which people acquire and use information resources and services. The paper investigates the need for new library missions; virtual libraries made possible by telecommunications technologies; the need for collaboration among schools, libraries and local government; opportunities for distance education; and equal access to information by all. Issues of ownership, obscenity, decency, and how local, state, and federal information policy will affect libraries all need to be addressed. Librarians have to determine the kinds of services libraries will provide--in a networked environment, doing the same things for the same people will not move libraries successfully into the year 2000. Libraries also need to assess what strategies will be necessary to obtain new resources to support library technology development, especially when faced with decreased federal funding. Librarians must keep open attitudes toward technology, as developing new skills, training, and staying current with changing technologies will be a priority. Many of libraries' traditional concerns, values, and goals--of equal access, literacy, and about people--will, and must, remain intact as libraries move toward the electronic networked environment. The key issue to address is the degree to which the library orchestrates and manages the use of information on the global information infrastructure as opposed to simply being one of the many providers. (SWC)

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Libraries in the Global, National, and Local Networked Information Infrastructure

By Charles R. McClure
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I'm struck by thinking when we talk about the one millionth volume that celebrating what libraries do and why libraries are important is an important activity in and of itself. In addition to collecting the one millionth volume, there is a range of other services and activities that libraries do that we need to celebrate more often. And I certainly am one to celebrate that.

But the matter at hand today, as we celebrate the millionth volume, and we celebrate not only what this library has accomplished but what libraries worldwide accomplish and what we do everyday, is to take a moment to pause and think about libraries as we evolve into the electronic networked environment. I like to tell people who talk about libraries and the roles that we've been involved in, what we've been doing, and my immediate comment is, "You know, we sit here now and we look at the web environment, we look at the Internet landscape, and we take web technology for granted, the growth and development of these kinds of information services. Two years ago there was no such thing. It wasn't there. It didn't happen." That's only two years ago, only two years ago.

I like to remind folks and students that as we sit here and we're grooving on Netscape, and we're doing this and we're grooving around, my comment is, "Yeah, but we'll think about Netscape in the future the way we think about DOS 2.0 right now." So to some extent I look out in the future and I think about the development of libraries and this national-global networked environment, and what I find myself having are what I would call virtual and other realities.

I want to form my presentation today around some key questions that I would like to ask. I think if we pursue these questions the answers will allow us an opportunity to think about

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what the options are for libraries as we move beyond the year 2000. And this is scary stuff. This is very scary stuff because on one hand I am not really a systems or technology person. I'm not here to praise technology for the sake of technology. Yet I also am not a luddite. I think we need some reality therapy about what we can, what we can't do, and the degree to which libraries will be able to transition successfully into this new and evolving networked environment.

So, what I would like to do over the next hour or so is talk about some of these key questions. I want to suggest that the theme of what I'm going to be talking about this afternoon is that I do believe that we have some serious challenges and opportunities facing us in the library world and the information management world. I want to explore what some of those are. So throughout this, we'll put up a couple of overheads so that you can get an outline of where I'm going.

Well, the first question I want to consider in this virtual reality is: Have we thought about new library missions, new goals, in this internationally networked environment? And if yes, what are these missions and goals?

Now some of you have heard me say this before, but my favorite reference librarian is outside my home state of New York. That's who does all my reference work. It's over the net. The OPAC, the public access catalog, that I use most frequently is in the United Kingdom. It's a global networked environment. When I think about this question of should the library have new missions and goals in this internationally networked environment, my answer is, "Yes."

The networked environment, I believe, has fundamentally changed the way in which many people acquire and use information resources and services.

We will have to think about a broader global networked environment and what our role is in that environment, not just for academic libraries, but public libraries, special libraries, school libraries, you name it. The networked environment, I believe, has fundamentally changed the way in which many people acquire and use information resources and services. Do you know that as we speak, God help us, the United States Postal Service is exploring the development of thousands of kiosks where you will get government information, make a reservation at Yosemite, et cetera. This sounds like stuff libraries used to do, government information. So I wonder: What are these new roles? How do we move to those environments?

When I think about this topic of missions, I have to think about what's happened. When I think about mission, I have to think about what this new telecommunications environment makes possible. It seems pretty straightforward to me that there are some very clear patterns. One is decentralization. There now is an incredible dispersion of political, personal, and

organizational information totally without regard to geography. In fact, I've met with some public libraries that are exploring the possibility of a virtual library system. By that I mean they are making an agreement among themselves—they are in different parts of the country, but they will be a library system—geographically dispersed. We can do that now. You don't have to be next to each other to be a system. That's a very different model for how we look at library services. The schools, the libraries, local governments, we have to learn how to collaborate. We no longer have the opportunity or the luxury for everyone to create every network over and over again. We need one good line coming into Arlington that everyone can work on and everyone can share resources. We don't have the luxury to go it alone.

The resources that are being made available and that individuals have at hand empower them. It could be that one of the most important factors that contribute to the democratization of many countries in this world is the global access to information resources.

Empowerment provides people with new methods for obtaining, accessing, and using information to affect change. It's incredible the number of people who are on the net using information resources, who have their own home page up. It's happening. The resources that are being made available and that individuals have at hand empower them. It could be that one of the most important factors that contribute to the democratization of many countries in this world is the global access to information resources. It doesn't matter that your country said, "We do not want external information." You put up a twelve-inch satellite dish on your home, and if you live in outer Mongolia you still can find out what's going on. That is a significant change in our world. Very significant.

Not only are these linkages possible, but they are now normal. Syracuse's School of Information Studies is teaching graduate courses in Singapore—and fortunately for me, I don't have to do twenty-two hours over and twenty-two hours back. It's done primarily via conferencing and via the Internet. This is a very different model—the distance education approach. Syracuse University lives in a global economic environment, as do you. Recognizing what to do in this global environment, however, is still a question of some importance to resolve. In fact, it can be kind of scary because if I don't like the services, if I don't like the information that I can get from the UTA Library, bang, I'm on my computer. I'm on the global network where I ***can*** get what I need. Now, I may not get the warm fuzzies that I like when I approach a librarian, but remember this is Chuck who lives in Syracuse, New York. In the middle of February, I'm not sure I want to walk six blocks to my library, when I can go over and get what I want from my networked Mac. It's very different. Very different.

There also is a sense of unpredictability in the networked environment. We don't know

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what's going to happen. Now for people who are really into planning, this is brutality at its worst. When I was in graduate school we learned strategic planning skills, and it was very straightforward. We do mission, goals, needs assessment, we do this, we do da da da da da. It's one-two, get a plan, and there's these steps. (laughter) You can't do that anymore. All of a sudden the systems librarian wakes up, and we find out that there is something out there called Mosaic and Netscape, and I need T3 minimum. And that happened over a one-year time period. Bang! So we now are into something that I affectionately refer to as approximation-based planning for library services. We plan to that point on the horizon over which we have some knowledge and some control. That's a very different model of planning. Then there's this issue of convergence. Again, thinking about our mission and what we are going to do in this networked environment, I tell you in all honesty, I look at this box on my desk and I don't know what it is anymore. I used to think it was a computer, but I guess it's a fax machine too. But then just last night I was using it to listen to Willie Nelson. You get it. What is your computer? It's telecommunications, it's computing, it's fax, it's CD. We are getting to the point where the technologies are so blurred I'm not sure it's useful to try to determine which technology is doing what. So I think those are some of the concerns that have to be considered as we work and we think about this mission.

As we work through what the missions and goals of libraries are in this networked environment, my question to you, those of you who work in libraries, is: "What are your assumptions regarding change?" Is your assumption that we're looking at little change over the foreseeable next couple of years? Are we looking at moderate change? Are we looking at radical change? And if you cross-pose that with the timeframe for the change, it can be scary because I think we're into at least moderate and radical change in the information environment in a relatively short period of time.

In fact, this has already happened, hasn't it? And yet in this environment I walk into libraries, I walk into corporations, and into information management specialists, and they are sitting there with $60-70,000 Sun work stations using them for—word processing. (laughter) We are information professionals, and we have a problem to deal with in terms of education, training, and staying current. I was saying this to a friend yesterday, and I said, "At least I'm trying to stay current." He said, "Stay current, are you nuts? I'd be happy if I knew what I needed to know in 1990." (laughter)

So when I look at this, I think we're in for some serious change. In fact, in the telecommunications environment I don't know what we're going to have. We have a religious war flaming in this country about what telecommunications will evolve into. I picked up my paper in Syracuse, New York, the other day, and our local electricity and gas provider is the headline on the front page: "Niagara Mohawk Power Utility to Provide Phone Services.'" Huh? That's the environment in which we are living. That's the degree of change I think that we're looking at.

Let's ask another question: What will you focus on in this networked environment? I feel very strongly that as this environment evolves, libraries cannot be all things to all people all the time. There is an issue of what can we do and do well? My favorite joke is everywhere I go across this country, I see four librarians doing the work of eight and getting paid for two. I have tried to convince my admissions committee at the School of Information Studies to not look at the GRE, to not look at other scores, but instead to give librarians a new test, which I call the MZQ, otherwise known as the Missionary Zeal Quotient. (laughter) And if you don't pass the Missionary Zeal Quotient, I don't care what you have on your other exams!

So what are libraries going to be? What will libraries focus on? There's a lot out there to focus on. What are you doing with approximately 3,500 to 4,000—we don't know for sure—electronic journals and newsletters that are of a serious, scholarly, high content level? What do we do in libraries to provide access to maintain and otherwise control them bibliographically? What do we do here? Are you downloading electronic journals? Are you providing electronic tables of contents? What are you doing? Or is this one of those where if you don't look at it, maybe you won't see it?

In order to think strategically, I think we need vision. We need to be able to articulate where it is we want to be three years, four years, five years from now.

These are serious issues about what we should be doing in the library field to manage these kinds of information sources. Be very glad that you do not work for the National Archives. Someone told me over at the National Archives sometime ago that the amount of electronic information that gets beamed down from the government's various climate and other data collection satellite systems would fill the Library of Congress a couple of times over on a weekly basis. Think about that amount of data, information, what do we do with that? One of the managers for a Federal data center recently wrote that he did not manage a data center, he managed a data cemetery. What do libraries do with all this electronic information?

So when I think of maintaining a focus, there are a number of different ways we can go.

But whenever I ask librarians, "Do you have too many staff in your library?" they usually do not raise their hand.

When we talk about the issue of focus, it's also an issue of strategic thinking. In order to think strategically, I think we need vision. We need to be able to articulate where it is we want to be three years, four years, five years from now. We do have to make plans, although planning is going to have to be very fleet-footed. We have to leverage resources. By leveraging resources I mean we need to be able to use the same resources to accomplish multiple objectives. For instance, one T3 line that comes into a local community can connect to a wide area net, so the schools, the government, the county, the academics can all use it. We have to start thinking collaboratively. Now as we look out at us [pointing at the audience], we are not the Nintendo generation, for good or for ill. But I assure you the younger generation, the kids out there, are fearless. Many grew up with computers. They'll try anything. And they're good at it. So these kids in high school, these kids in college, you should see the stuff they are able to use and access, and what they create and present in their own home pages. I'm constantly impressed. Terrified is a better word.

Librarians have no choice because there are plenty of other people out in society who are geared up to manage these new technologies, to use these new technologies, to get them into the home and provide applications and services, and they don't know how to spell the word library.

So we also have to be opportunistic. I think this figures into our vision. But I think that we are at the point where librarians need to become the smackers instead of the smackees, if you will. Too much is happening, too much in our society is dependent upon a societal and historical knowledge and presence that libraries have done, must do and should do in the future, but we're not sure what to do and how to do it best in this electronic environment. Let's ask another question. How can the library community stay knowledgeable about the new information technologies, understand their operation, and demonstrate their applications? See, I have no sympathy for y'all. I'm supposed to teach these new applications. And it is brutal.

One of my favorite problems with learning new technologies is that just about the time you think you have it figured out, you know what they do to you? They change it. I live in constant fear that for my Mac I'm going to have to upgrade from WordPerfect 3.0 to something else. I lived in constant fear when we went onto daylight savings time. You know how much time it took me to figure out how to set all my clocks, the VCRs? Did you go through that? I mean I'm sitting here in my car having to pull out the manual to figure out which buttons to set in which order to change the time. That's not going to go away.

So to some degree I'm going to say to you, "Librarians have no choice because there are

plenty of other people out in society who are geared up to manage these new technologies, to use these new technologies, to get them into the home and provide applications and services, and they don't know how to spell the word library."

The next question that I would pose to you is what I call the endless upgrade: Is there an end to the upgrades and changes? Every two to three years we're talking about a major upgrade in new technology in information services. And the public sector is badly prepared to deal with these ongoing upgrades. The general rule of thumb—at least that I use in the corporate sector—is that 25 percent of your annual information technology budget will be needed just for upgrades. Many public sector places can't put that much money aside for upgrades. A public library can't say, "Well, I'm just not going to spend this money this year. I'm going to wait." So we are constantly behind the eight-ball when it comes to this technology and the upgrades. And that's not going to go away.

Any of you who have a 486 on your desk or one of the new Power Mac series, you need to recognize—you're going to love this—that the total computing power that you have in one 486 is more computing power than NASA had in 1969 to put a man on the moon. Think of that! More computing power on a 486 or a Power Mac than what NASA had in '69 to put a man on the moon. And again I ask you: What are most of us doing with that power? Get it? You see why I'm worried?

The endless upgrade will not go away. The strategy of saying, "Well, I won't worry about that," will not work. We will be in a constant state of upgrading. How many of you have done web searching on dial-up from home at a 14.4 or 28.8 baud rate? Is this brutality? It's awful. There is a new phenomenon in this country—you're going to love this—where people come in to work in the evenings and weekends in order to use computing on networked environments because they have decent connectivity at work and don't have it at home or in the schools. Now there's a phenomenon, people going back to work on the weekends!

How about another question? I'm really concerned about this issue of connectivity versus programs and services. Recently, after I did a presentation at a state library I got a phone call about a week later, and the public library director called me up and said, "Chuck! Chuck! Chuck! I'm connected! I'm connected! I'm connected! . . . what do I do now?" (laughter) Good question because it turns out from the research that we've done, getting connected accounts for only about 18-20 percent of the total networked cost associated with providing networked information services in a library. There are training costs, there are equipment costs, there are management costs. Connection—believe it or not—is the easy part. You know what the hardest part is? Getting people to use the equipment and integrate this technology into their work. And I can assure you teaching interactive video around the world is a very different way to teach than how one teaches in a classroom.

So when we think about what kinds of services to provide and then who is going to control these services, I'm a little nervous here. [McClure shows a cartoon of the characters "Beavis and Butthead."] Don't you love it? Fox had this on at 4:00 in the afternoon originally because it was "for adults." And there are issues of ownership, obscenity, decency. Those of you who are familiar with the new Telecommunications Act [PL 104-104] know that public libraries can be fined every time little Debbie gets on the net at the library and dials up "alt.sex.bestiality" [Since this speech, this portion of the Telecommunications Act was found to be unconstitutional.] So when I think about providing library programs and services, just providing connectivity isn't enough.

And when I think about what kinds of services we need to provide, we really have to start thinking about innovation here. You know what I'd love to see? I live in a little village outside Syracuse. It would be great if my daughter when she came home from school, and I said, "What's your homework tonight?" and instead of her response: "Arrrgh," I dial up our local network. Those of you who have teenagers, you know of what I speak. Wouldn't it be great if in my village, we had a networked environment in which the schools, the local libraries, county government were all connected to each other and the net? And I get on and here's my daughter's homework assignments for the whole week in each of her classes. And I can leave an e-mail for the teachers. Do you know how hard it is to get in touch with teachers? And then when the teacher decides to have an assignment on whales, the library has a little bit of warning, as opposed to all of a sudden 40,000 students coming in and they all want the three books that the public library has on whales. Right, public library people?

And if I had a live demo and could get you into Charlotte's Web or the Boulder Community Net—and some of you have seen these community nets that are out there—you know this is an interesting new role for libraries, where libraries build and manage local community nets. How many of you have played with Charlotte's Web or some of these other community nets? A couple of you. They're unbelievable. Here is one example where libraries are becoming very, very successful.

So some of the key questions I think we have to start asking—and they're not too different from what we've asked before—are who are the users? How well are they able to identify and access networked information resources? What are the most important resources they need? What are the costs and benefits of specific networked services? Would the library receive more or better benefits by reallocating resources to networked services? When I was at the University of Oklahoma, I was asked to evaluate in a nearby state a "Books by Mail" program that was run out of a public library. To cut to the chase, it would have been cheaper for that public library to give away the books than it was to run this books by mail program. You know what I mean? You had to write [for] a book or send it out in the mail, you send out reminders to return it, then you send the Royal Canadian Mounties to get the book back. It would have been cheaper to buy the book and give it away. My question is: What programs are we operating in our libraries right now like that, that we don't know about? We have limited resources, so where should we put those resources for the greatest benefit? That's a tough one. I don't stand here saying to you it is not tough. It is tough.

I'm pretty well convinced that in a networked environment doing the same things for the same people—even if it's better—will not move libraries successfully into the year 2000.

In fact, when I think about new services development, I'd like to suggest to you that if we look at our target audiences in libraries and the information services that we provide, in light of the information products and services we offer, we can come up with a relatively straightforward little two-by-two matrix. Generally, most libraries are stuck in cell one. By that I mean they continue to try to push the same services onto the same target groups. In marketing language that's called market penetration. What we are going to have to start thinking about are new services and new products for new target audiences. For example, the service that I talked about with the local community net between the school, the library, and local government, that would be an example of diversification.

I'm pretty well convinced that in a networked environment doing the same things for the same people—even if it's better—will not move libraries successfully into the year 2000. We have to start thinking about services that fit into cells two, three, and four. And that's going to call for doing things differently. That's going to call for stopping some of the things we do now. In fact, it could well be—and probably is—that you are better off to drop X amount of money from your collection development budget and use it for licensing, and use it for access into the networked environment to maintain and improve the range of accessed information resources. I know it's an electronic environment and you won't be able to hold these resources in your hand, but the reality is that when you hear people say to you, "Oh, there's

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really nothing much out on the web that we could use in our library," wrong! They're just dead wrong.

The reality is there is so many reference sources out on the net that it's unbelievable. What else can I tell you? The next person who comes to you and says, "Oh, yeah, well, there may be good sources on the net, but they're unfindable. They're very disorganized out on the net." Wrong! There are wonderful, effective search engines, browsers out there. The most recent one that I have tried is Alta Vista. For any of you who have played with the Alta Vista browser on the net, it's incredible. Mind boggling. Not only can you do boolean searching, you can do boolean searching and then use the term "near," you can limit searches by dates, you can put in special phrases. The search engine is impressive. Now, if you're sitting there feeling a little anxious because you don't know what Alta Vista is, good! See, this is the next step. These are the things that are happening. They're there.

Let's talk about everybody's favorite topic, finances. What strategies are going to be necessary to obtain new resources or support library technology development? Or maybe it's redeploy existing resources? I was giving a speech in Vancouver at the Canadian Library Association a year or two ago. I was railing that, "You think your ship's going to come in and you are going to get a couple of million . . ." and this woman calmly raises her hand and says, "Somebody just gave my library a million dollars, Chuck." Well, when was the last time you in your library got a million dollars? Hands please. No, I don't see any. The problem here is that the federal trough is being closed down. Did you all notice this? There is less federal money, and what money there is is very limited.

But the reality is for public libraries, federal support is only about 7 percent of the budget, for academic libraries even less than that. So libraries are on their own. No savior is going to come forward and save us in the library field. We, I believe, need a strategy of redeploying existing resources. Collection development money, some of it may need to go into licensing and accessing electronic information resources. We may need to redeploy that money so we can get our staff trained. We may need to get our staff to understand that they must take time to get new skills in these new technologies [or] we can not move forward. We're just going to have to say that training is a priority. The financial issues facing libraries are not going to get better any time soon.

One of the things that I find when I'm working with planning boards and when I'm working with academic systems development is that whining never works. (laughter) Whining is not going to do it because I think we have entered a new arena now in the public sector and in the academic sector, which is called "one downsmanship." No matter how bad Tom

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[Wilding] can say his budget situation is, there will be somebody else on this campus who can say his is worse. One downsmanship. It's the same in public libraries. It's all over. What we're looking for is not whining, but for those who say, "I have an idea. I have a strategy. Let me show you how this vision will work in Plano, Texas," or wherever. That's the strategy that has a chance. Great leaders are those who have visions that they can articulate clearly to the people who work with him or her. The vision thing is important.

Near and dear to my heart are questions of information policy. How will evolving federal, state, and local government policies for the National Information Infrastructure affect libraries? It's happening. I have recently spent considerable time dealing with the Universal Services Provision of the Telecommunications Act of 1996. The FCC released a docket asking for comments on the notion of universal service, what that means for libraries and K-12, and how to define it. This is important for us in the public sector. The way in which universal services are defined, the way in which libraries and K-12 receive, "Special services versus advanced services," two terms which are in the bill, are critically important. This bill will have a significant impact on the degree to which the American public has access to electronic information.

If there's something that does remain the same, it's the library community's concern for, belief in, and dedication to, improving and maintaining equal access to information. If there's something libraries do and it's something libraries care about, it's equal access to information resources—whether they are in print or electronic format.

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Issues of information policy, although we oftentimes don't see them clearly, have wide ramifications. One issue, universal service, within the Telecommunications Act, is especially significant. If we don't fight this battle, if we don't move, it we don't stand up for equal access in an electronic environment, we will have lost an important battle.

In this networked environment the kinds of policies, the policy wars in which we're involved right now, are unbelievable. A story going around Washington, D. C. is that when the new Congress came into session, Newt Gingrich called up the Library of Congress and said, "I want all the House bills, resolutions, as much as possible, I want them up and available electronically over a net, over a web site." Mr. Gingrich is very literate about technology and information. The fact of the matter is that by inauguration day the Thomas Web was up.

Now the Thomas Web at the Library of Congress—I have a picture of the home page here, yeah—here's what the home page of Thomas looks like. Bang! Full text of legislation for the One Hundred Third-One Hundred Fourth Congress. Bang! Full text and indexing into the *Congressional Record*. Bang! What's the current status of the bill? You got it. I do this from my office all the time. How many of you have used the Thomas Web? Is this like great? Is this like unbelievable? I must tell you using Thomas is much quicker than requesting a print copy of the bill from the Government Printing Office. (laughter) That's the kind of resources up there. That's what's available. If you do not have electronic access to webbed information resources at your reference desk, I'm going to suggest to you, that you do not have high quality reference service. And don't tell me you are technology challenged!

So when I go back and think about these information policy issues—and that's just one of them—there are scads of them, scads of them that we're fighting right now. The GPO is under attack. The depository library system is under attack. Some in Congress would do away with the National Commission on Libraries and Information Science. These issues at the federal level and at the state level are critical.

In the state of Texas we now have a special fund, the Texas Telecommunications Infrastructure Fund; Bob [Martin, director of the Texas State Library] was trying to explain to me this morning that millions of dollars are going to come in per year through this fund to be used for networking connectivity and services in schools and libraries. Incredible opportunity. That was done at a policy level, where policymakers decided that's how we're going to support public access. As far as I know the state of Texas is the only state that has this in

place. It's a beautiful example that the solutions will come at a local/state level and not at the federal level. We really are going to live in an era of "God helps those who help themselves." And you will have a heck of an opportunity in this state to use those resources. But it was done at a statewide level.

Now, how the money is going to be spent and who's going to do it and who gets it, whoa. That's going to be fun, isn't it? I think there will be a bit of politics going on here, and we will have to fight the good fight at the state level to get our hands into that pot. That's okay. I just want equal opportunity here.

I guess my parting shot on the politicians and on the information policy side is my favorite quote with apologies to Socrates, "Those who are too smart to engage in politics are frequently punished by being governed by those who are dumber." (laughter) So for us in the library community, if we think we don't need to be involved in this political environment, I think we're wrong. We must be engaged in this political environment.

Librarian attitudes and skills are other important topics. I tell my beginning class—I teach the first course in the MLS program, called Introduction to Libraries and the Information Professions—I tell my beginning students that the half life of their MLS degree is about two to two and a half years. Fifty percent of what they learned will be out of date in two years. Think about that, and this is at a good school. I don't want to go on with that. (laughter)

When was the last time that you went back for serious retooling? Where you said, "Gee, I really need to pick up x, y, z new skills." Two and a half years, 50 percent out of date. There is another part of this, it's the attitude thing. You know, the attitude thing is, "I don't like, well, I don't like computers. Uuugghhh." How about that favorite quote from a gentleman in an audience like this when I was talking about attitudes and getting retooled and so forth, and he said in one of those stage whispers that everyone could hear in the auditorium, "It doesn't bother me. I'm going to retire in seven years." (laughter) What? You think you're going to wait this out? I don't think so. So in terms of attitudes and skills, we've got to get going here. We have to say, "Wait a minute. We're going to have to take time." Library directors are going to have to allow and provide and facilitate for staff to get up to speed, provide training, hands-on. Some of the best places that I have found across the country to get up to speed and get hands-on skills and knowledges are at the local community colleges. They don't mess around. They put you at the terminal, you get to do it. You do need to know how to operate the equipment.

We care about services, we care about users. The libraries in the future must maintain that traditional important skill and quality. We've got to know who they are. We've got to know their needs.

I was startled by a study that reported 40 percent of adults in the United States do not know how to program a VCR. What they do is they record it on the quick record thing, where whatever's on it records and they play it back later because they can't figure out how to program the recording. That's what we mean by user friendly. What we in libraryland think of as user friendly is miles away from what users think user friendly is. Trust me on this.

I'm sorry, you need to be retrained and re-educated. I will need to be retrained and re-educated. I have to do it. I can't wait it out. I'm the oldest living forty-seven year old in the country. I have had to be retooled more times than I care to admit. Remember this is Chuck with a bachelor's degree in Spanish. My master's degree is in American West Borderlands History. So don't be going, "Oh yeah, well, he's a pinhead. He can do this stuff." (laughter) I'm not. I've got the same problem you have. I tried to be gentle with you on that one.

Which leads me, interestingly enough, to one of the most important attributes that libraries do, the importance of the user. We care about services, we care about users. The libraries in the future must maintain that traditional important skill and quality. We've got to know who they are. We've got to know their needs. But, see, one of the big problems that we have in moving to the electronic networked environment is identifying those needs. Can you imagine doing a survey in downtown Arlington? "Excuse me very much, but what web browsers do you prefer? Mosaic, Netscape, and the search engines of Alta Vista versus Yahoo?" How do you ask people to tell you what their need is in a networked environment when they don't have a clue what it is you're talking about? This puts a whole new definition on needs assessment. One of my favorite examples, if I can find it, is the web page for us at the School of Information Studies that we've had up for sometime. This has gone through a lot of renditions. At our shop now, you want admission information, you click on admission and you can get admission information. You want to find out about our current schedule, you want to click on people, you can find out who the faculty are. Remember we are the School of Information Studies; it makes sense that we should have this up and working, don't you think? We have found that the number of people who are now inquiring about our program has grown enormously. Our enrollment has quadrupled in the last three years, in part, because of electronic access, distance education, and new programs. We're teaching in Singapore in a distance ed mode. Anybody in the world can get a master's degree in library science from Syracuse University in a distance ed mode.

So what kind of services do we need? We're thinking of the users. What do the users want? We have them access this web and tell us. I publish my reports on the net. The study that we completed for NCLIS (National Commission on Libraries and Information Science) last year on Public Library Internet cost and cost models, by the end of the second week on the web we had huge numbers of people who had looked at at least the front page of that

study. The GPO printed 2,500 copies, I think, plus it took time to publish it in a print format. This was up on the web by the end of the day. Wait a minute! Wait a minute! Chuck is a publisher now. Do you understand what just happened?

You think librarians are going nuts? Think about people in the travel business. I just went through a travel agency on the web where I saw where I wanted to go, could make my reservations, clicked on video clips so I could see what the inside of the hotel looked like, made reservations, got off, and, bang, I was done. No intermediary. That should have gotten your attention. The real estate business is looking at this, and they're going through some angst because there are real estate companies where it doesn't matter where you're moving. If you're going to Detroit or Boston or wherever, you get into the web site, you can preview the homes that are available, you get sound, you get the video, and you look at all these homes yourself. Interesting service.

No, I'm not saying the demise of the printed book. . . . I said that we're in a transition period that is increasingly difficult to manage effectively, and that you can not transition effectively into the networked environment until we better understand what that networked environment is. To understand it means you have to try it.

A question I also want to raise to you has to do with issues of evaluation. What constitutes a successful networked based service? We don't have much evidence. Do you understand? We have little evidence that says networked services make a difference. We're in a trust me, trust me mode. The manual that we just completed is one of the first efforts to try to do that [*Assessing the Academic Networked Environment*].

I think as we move into the future, our governing boards, our school administrators, are going to want to know, "Excuse me, Tom, but if you get a new network in your library, will it make a difference?" And Tom's going to have to say something other than, "I think so," or the public library saying, "Yeah, I don't know, but we do have a lot of smiles on children's faces," which is important, but it doesn't sell in terms of the accountability mentality that we have in this country today. That is sad, I believe, but that's where we are.

In fact, I guess what I'm coming down to is that a friend of mine, Nancy Van House, talks about something called the "panda syndrome." Isn't a panda cute? Cute. If ever you wanted to know about niche development, this is it. The environment in which this cute thing lives is so delicate, twenty pounds of fresh bamboo per day—is that right—something someone told me. You know how hard it is to get fresh bamboo, twenty pounds of it per day? And the whole climatological area in which a panda can live, but we all go, "Ain't it cute?" And you know what? I hear people in libraries say, "Yeah, but libraries are really good." I worry that the library establishment is creating for itself a niche environment that is so structured, that is so narrow, that we may not be able to get our twenty pounds of bamboo

every day to survive, and that replacements for what that twenty pounds of bamboo might be will be delivered up by Barnes & Noble or Kinko's, and will be delivered up by networked information services that go around libraries. This worries me because of the development of those neat networked services.

The information and the provision of services that are out on the net now are unbelievable. For those of you who haven't surfed, you must take a look and get on. You've got to get out there and try these sites and see what's going on.

No, I'm not saying the demise of the printed book. No, I'm not saying that. Don't walk out of here and say, "Oh, Chuck doesn't like books." I didn't say that. I said that we're in a transition period that is increasingly difficult to manage effectively, and that you can not transition effectively into the networked environment until we better understand what that networked environment is. To understand it means you have to try it. The local cable TV gives you a notice that says that they expect to be able to provide 128K into your home by the end of the summer. Well, is that good or bad? I mean, what does that mean? I will be able to have 500 channels of *My Mother the Car*? Yuck!

The library as an institution cares about people. It is a service-oriented profession. It's one of the things that we all kind of hang our hat on, services. We care. We care about equal access, whether it's print or electronic. We care about literacy. We care about people. That's what we do.

See, I'd rather have access to my libraries and information services and get into a "moo." When was the last time you went into a moo? These are interactive discussion groups where twenty or thirty people are in the same electronic space at the same time, and you have discussions. We do it with our classes, most of the distance ed class. Gets a little crowded after about fifteen, but you have discussions. It's called a moo, m-o-o. Check it out on the Internet Public Library, the IPL. Got some public librarians here? Have you checked out the IPL, the Internet Public Library? Run out of the Library School at Michigan. You can leave reference questions, and you get all that's going on at ALA, blah, blah, blah. There already is a virtual public library on the net.

Well, I'm going to return to my beginning point, which is this need for vision. I think to some extent many in the library information profession have been beat down. It's sort of like we're afraid to dream. We need to dream. We need to dream of what it is that we can do in this library future. I think that vision statements require librarians to explicitly state, "Here's what I think is going to happen." And you may be wrong, but I'd rather do that than just be a leaf in the wind.

I think the primary activity is strategic planning and thinking, yeah, there's a lot of

different things UT Arlington Library could become. But what is the thing that it's going to become? Or Arlington Public Library? Or the junior college? Or fill in the blank? The vision is critical because we are, at the moment, in a candy store with hundreds of open bins of candy to choose from of what we could be. We can't do them all. And I don't think we're going to compete effectively with Time Warner, MCI, or fill in the blank.

So when I look at becoming the global electronic networked library, which is another possible vision, I think that we will continuously be amazed at what happens every couple of years in terms of this national networked environment, the dream of the NII. You know, Al and Bill's Excellent Adventure as it continues, because the National Information Infrastructure is happening. In fact, it's a global information infrastructure at this point. We will seamlessly continue to connect people and services globally. It's happening. But I think the key issue is the degree to which the library is the hub in those spokes. It's the degree to which the library orchestrates, manages that delivery and use of information as opposed to simply being one of many providers. Because ultimately what I think we do—what I think libraries do—in our society is absolutely critical to our long-term success as a society.

The library as an institution cares about people. It is a service-oriented profession. It's one of the things that we all kind of hang our hat on, services. We care. We care about equal access, whether it's print or electronic. We care about literacy. We care about people. That's what we do. And in this networked environment as we move toward it, many of our traditional values and goals will remain intact, must remain intact, and those are some of them. But whether we hit our one millionth, our two millionth, our three millionth volume, what separates the library community out is the degree to which we serve and care for our society. I think we will make the transition well, but I think we have a number of bumps on the road that we are going to have to get over. Probably the most important bump is the attitude of us that says, "I'm not going to wait this networked environment out. I've got to deal with this one today. I have to become knowledgeable and understand the issues with the networked environment. I have to develop those skills, and I have to take time to learn those things," because no one else will do it for you.

Thank you all very much.